

NATIONAL WEATHER SERVICE INSTRUCTION 10-1716

April 28, 2004

Operations and Services

Dissemination Policy, NWSPD 10-17

NOAA WEATHER WIRE SERVICE (NWWS) SYSTEM MANAGEMENT

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Signed by _____

John McNulty, Jr.
Director, Office of Operational
Systems

April 14, 2004

Date

NOAA Weather Wire Service (NWS) System Management

Table of Contents	Page
1. Document Purpose	2
2. Description	2
2.1 Public Dissemination	3
2.2 Warnings and Forecasts	3
3. Organizational Responsibilities	3
3.1 Weather Service Headquarters (WSH)	3
3.2 Regional Headquarters (RHs)	3
3.3 Field Offices	4
4. Broadcast Area	4
5. Products	4
5.1 Product Policy	4
5.2 Product Format	4
6. NWS Network Costs and Accessibility	4
6.1 National Weather Service	4
6.2 State Agencies	5
6.3 Subscribers	5
7. Support Services	5
8. NWS Maintenance	5

Appendix

A. NWS/State Agency Agreement.....	A-1
B. NWS Product Collection and Paired Uplink Sites.....	A-3

1. Document Purpose. This Procedure describes how the National Oceanic Atmospheric Administration (NOAA) National Weather Service (NWS) manages, operates and maintains the NOAA Weather Wire Service (NWWS).

2. Description. The NWWS employs a two-way satellite network for collecting and disseminating information from all NWS Weather Forecast Offices (WFO) and National Centers, to a variety of subscribers throughout the United States. NWWS receives products from the product sites at a rate of 9.6 kilo-bits per second (kbps). Collection of products and satellite uplink is performed at twenty sites equipped with 2-way transmit/receive capability (the 2-way sites are located at the 13 WFO/River Forecast Centers (RFC), 6 National Centers, and 1 WFO, see Appendix B). Products are received from the satellite at Master Ground Station # 1 in Alexandria, VA, and delivered to the contractor's Message Processing Center (MPC) in Chantilly, VA. Most products are sent twice through two satellite, Very Small Aperture Terminal (VSAT), uplink sites to ensure receipt if one site goes down. Additionally, NWWS receives backup support from the Advanced Weather Interactive Processing System (AWIPS) Network Control Facility in Silver Spring, MD for priority 1 weather warnings by up-linking these products on the NWWS. Any product duplicates are removed from the NWWS data stream at MPC.
 - 2.1 Public Dissemination. The NWWS is the primary means by which this vital information is delivered to mass news disseminators and public safety agencies. The NWWS broadcast is sent from the contractor's MPC to user's via satellite from Master Ground Station # 2 in Ft. Meade, MD. The broadcast data rate is 64 kbps.

 - 2.2 Warnings and Forecasts. Weather warnings, forecasts, and other meteorological information are transmitted in a plain language format.

3. Organizational Responsibilities. This section describes the responsibilities of the NWS Headquarters, Regional Headquarters, and field offices for NWWS.
 - 3.1 Weather Service Headquarters (WSH). The Assistant Administrator (AA) for Weather Services has overall responsibility for the NWWS program.
 - 3.1.1 Office of Operational Systems (OPS). OPS provides staff assistance to the AA for Weather Services concerning NWWS program management and configuration control. The Dissemination Systems Branch (OPS17) has responsibility for the following:
 - a. Program management of the overall NWWS telecommunications system.

 - b. Management of the contract with the NWWS system contractor, and NOAA Procurement liaison as Contracting Officer's Technical Representative (COTR).

- c. Processing of change requests and configuration control management at each NWS field site and Systems Operation Center.
- d. Design, development, maintenance, and validation of databases for all sites.
- e. Maintain the NWWS internet site (www.nws.noaa.gov/nwws/)
- f. Outreach to government and private organizations and to the public regarding NWWS (consistent with NWSI 10-1711).

3.1.2 Office of Climate, Water and Weather Services (OS). OS is responsible for establishing service requirements, including the nature and scope of products to be transmitted. OS is responsible for the definition of data message format and content, generic code format and usage, and operational backup procedures.

OS is responsible for the Change Management Process (see NWSI 10-103), including Administration of Data Review Group (DRG) Requests for Change (RC). These are collected and forwarded from Regional Headquarters, and National Centers For Environmental Prediction (NCEP), for product addition, deletions, or content changes. OS forwards approved NWS RC to OPS, and the Office of the Chief Information Officer (W/CIO), for implementation (consistent with NWSI 10-1715).

3.2 Regional Headquarters (RHs). It is the responsibility of RHs to coordinate with the field sites for installation problems or operational changes and to forward to OPS17 any maintenance or end-user problems that cannot be resolved at the local or regional level.

RHs validate field requirements for new or updated data to be placed on NWWS and forward requests to WSH by initiating RCs. RHs assist WSH and the field in troubleshooting data issues.

3.3 Field Offices. The NWS field offices are responsible, in accordance with pre-determined schedules and procedures, for preparation and issuance of the products available on the NWWS. Field offices are an important interface with the external end-user community. The NWWS has 14 WFO up-link sites (13 WFO/RFC and 1 WFO, see Appendix B). These sites are responsible for monitoring their product streams, and reporting system outages to OPS17 and the system contractor.

3.4 National Centers. National Centers require prior approval from HQ on any new products for NWWS. The 6 National Center up-link sites (see Appendix B) are responsible for monitoring their product streams, and reporting system outages to OPS17 and the system contractor.

4. Office of the Chief Information Officer (W/CIO). The W/CIO manages the Telecommunication Operations Center (TOC), with responsibilities that include the overall management of telecommunication interfaces. A major component of the TOC is the NWS Telecommunications Gateway (NWSTG), which is the principal data communications switching and monitoring facility. The NWSTG manages processes that control the routing of data, both domestically and internationally.

5. Products. Most products for weather warnings, forecasts, and other meteorological information are transmitted in a plain language format. Products are disseminated to outside users via IP broadcast at an output rate of 64 kbps. The end-user receives these data by means of a very small aperture terminal VSAT satellite receiver, that utilizes a 1.8 meter dish antenna.

5.1 Product Policy. OS, in coordination with the RHs, establishes the policies regarding all products transmitted on the NWWS (NWSI 10-1715, *NOAA Weather Wire Service Dissemination*). These policies pertain to product type, content, and format. Any requests to add, delete, or change the official set of products transmitted on the NWWS shall be governed by the NWS Configuration Management DRG using established policies. This section documents the broad policies pertaining to NWWS products.

5.2 Product Format. Products transmitted on the NWWS shall be, in general, alphanumeric, or graphic, and in plain language format so the information within the product can be easily understood by the general public. NWWS products include, but may not be limited to, weather and flood warnings, watches, statements, and forecasts.

5.3 Product Origination. Products transmitted on the NWWS originate from NWS Offices, WFOs, RFCs, National Centers, and also from state agencies when appropriate agreements (see Appendix A) have been established between the NWS and the state. NWWS also receives products from the U.S. Geological Survey's Earthquake Center. OS will establish the format of all specific NWWS products and ensure the consistent use of established formats (NWSI 10-1701, *Text Product Formats and Codes*).

6. NWWS Network Costs and Accessibility. This section outlines the NWS policy on cost and access to the NWWS.

6.1 National Weather Service. The NWS bears all costs for the operation and maintenance of NWWS, by a private sector contractor. Access to the NWWS for the purposes of disseminating all-hazard warnings will require an Memorandum of Agreement (MOA) between the NWS and the issuing party or agency. Access is accomplished indirectly through either a manual or automated interface at NWS WFOs or National Centers, or directly through an NWWS uplink. Warning message formats are stipulated by NWS.

6.2 State Agencies. A state agency (non-NWS) will be designated as the official NWWS data exchange agency. In a large number of states, the designated agency will be the State Police. In other states, it may be the Highway Department, Office of Emergency Services, or some other agency with weather-related interests (Hawaii is the only exception; not having a NWWS system). A formal written agreement with the specific state agency must be in place regarding this data exchange arrangement. The agreement form to be used between the NWS and designated state agency is shown in Appendix A.

The designated state agency will receive NWS information by means of a dedicated receive-only NWS satellite receiver and distribute this information to other appropriate agencies within its jurisdiction, and will, where appropriate, provide data to the NWS via a dedicated or dial-up telecommunications connection. This connection will be used by the state to provide the NWS with important local weather information (e.g., road condition reports, severe weather reports, observations, etc.).

NWS funds the entire cost of equipment, including installation and operation, for the NWS receive-only satellite earth station to be located on the state agency premises. The states are required to pay only for their monthly telecommunications (i.e., TELCO) charges to send data to the NWS, and for any special equipment (e.g., modems, printers, etc.) they may need to send their data or to internally display the data they receive.

6.3 Subscribers or End Users. Under the terms of the NWS contract, the end-users of the NWS, such as mass news disseminators, private companies, private forecasters, other Federal agencies, local governments, etc., can coordinate or contract directly with the system contractor.

7. NWS Maintenance. Maintenance is provided by the NWS system contractor in accordance with the current NWS NWS system maintenance contract.

APPENDIX A
Agreement Form Between NWS and Designated State Agency

U.S. Department of Commerce
National Oceanic and Atmospheric Administration
National Weather Service
Dissemination Systems Branch
Silver Spring, MD 20910

Agreement: NOAA Weather Wire Service (NWWS) Data Exchange Between the National Weather Service and Designated State Agencies

Whereas the National Weather Service (NWS) of the Department of Commerce distributes weather reports, warnings, forecasts, etc., over the NWWS for the public interest, convenience, and safety, and whereas the state/commonwealth of _____ has an interest and need to receive NWWS information for the use of public safety agencies within the state, whereas the state/commonwealth of _____ may have access to weather information of importance and interest to the NWS, the NWS and the state/commonwealth of _____ hereby agree to the following terms and conditions:

1. The NWS shall:
 - (a) Pay all acquisition, installation, and maintenance costs for the necessary satellite data receive-only equipment for the designated state/commonwealth agency.
 - (b) Transmit NWWS data to the designated agency via the NWS provided satellite data receiving equipment.
 - (c) Provide required assistance to the agency in understanding and interpreting the information provided.

2. The Designated State/Commonwealth agency shall:
 - (a) Transmit special weather information (e.g., road conditions, severe weather reports, flooding reports, etc.) to the NWS via a state-provided tele-communications connection to a designated NWS site. All such information transmitted shall utilize formats and protocols specified by the NWS.
 - (b) Receive NWWS data via the Government-provided receive only satellite equipment.
 - (c) Assume full responsibility for the necessary internal data distribution and any intrastate agency agreements for data distribution, and hold the Government and its officers harmless from any damage which may arise from the use thereof.

- (d) Provide any terminals, interfaces, cabling, etc., needed to output, print, or further distribute information received from the satellite equipment.
 - (e) Not establish a routine public service using the information from the NWS.
3. This agreement is for an indefinite period and may be canceled by either party upon thirty (30) days written notice.
 4. The designated NWS offices (primary and back-up) to which the state/commonwealth of _____ shall transmit or receive weather information are:
 _____ (Primary NWS Office)
 _____ (Back-up NWS Office)
 5. EFFECTIVE DATE: This Agreement shall become effective on the last date shown below when executed by the parties hereto.

STATE AGENCY

UNITED STATES OF AMERICA
Department of Commerce
National Oceanic and Atmospheric Administration
National Weather Service

By _____
(Signature)

By _____
(Signature)

TITLE: _____

TITLE: Chief, Dissemination Systems Branch
Office of Operational Systems
National Weather Service

DATE: _____

DATE: _____

AGREEMENT NO. _____

APPENDIX B
NOAA Weather Wire Service (NWS)
Product Collection and Paired Uplink Sites

NWS products originate from 142 NWS Offices, including 107 Weather Forecast Offices (WFO), 13 WFO/River Forecast Centers ((WFO/RFC), representing 26 NWS Offices in 13 co-located facilities), and 9 NWS National Centers, utilizing the Advanced Weather Information Processing System (AWIPS). NWS also receives products from the U.S. Geological Survey's National Earthquake Information Center in Golden, Co.

Collection of products, and satellite uplink, is performed at the 13 WFO/RFC, 6 National Centers, and 1 WFO (see below). Products are then received from the satellite at Master Ground Station # 1 in Alexandria, VA., delivered to the Computer Sciences Corporation (CSC) Master Processing Center (MPC) in Chantilly, Va., and broadcast back to the satellite, to users, from Master Ground Station # 2 in Ft. Meade, Md. (see figure 1, page A - 4). Most products are sent twice through two satellite uplink sites (paired AWIPS hubs, see below), to ensure receipt if one site goes down. Additionally, NWS receives back-up support from the AWIPS Network Control Facility (NCF), in Silver Spring, Md., for priority 1 weather watches and warnings. Duplicate products are removed from the NWS data stream at MPC before broadcast.

WFO/RFC Paired AWIPS Hubs Up-linking Data to NWS

Primary Up-link	Secondary Up-link	Third level backup
KCTP/KRHA (State College, Pa)	KBOX/KTAR (Taunton, Ma.)	AWIPS NCF (priority 1 products)
KFWD/KFWR (Dallas, Tx.)	KSLC/KSTR (Salt Lake City, Ut.)	AWIPS NCF (priority 1 products)
KFFC/KALR (Peachtree City, Ga.)	KLIX/KORN (Slidell, La.)	AWIPS NCF (priority 1 products)
KMPX/KMSR (Minneapolis, Mn.)	KILN/KTIR (Wilmington, Oh.)	AWIPS NCF (priority 1 products)
KEAX/KKRF (Kansas City, Mo.)	KTSA/KTUA (Tulsa, Ok.)	AWIPS NCF (priority 1 products)
KSTO/KRSA (Sacramento, Ca.)	KPQR/KPTR (Portland, Or.)	PAFC/PACR (Anchorage, Ak), and AWIPS NCF (priority 1 products)

National Centers Up-linking Data to NWS

- KWNS (Storm Prediction Center, Norman, Ok.)
- KNHC (Tropical Prediction Center, Miami, Fl.)
- PHEB (Pacific Tsunami Warning Center, Honolulu, Hi)
- PAAQ (West Coast/Alaska Tsunami Warning Center, Anchorage, Ak.)
- KNEC (National Earthquake Information Center (Golden, Co.)
- KNCF (AWIPS/NOAAPORT Network Control Facility, Silver Spring, Md.)

WFO Up-linking Data to NWS

- TJSJ (San Juan, PR)
- KLIX/KORN (Slidell, La.)

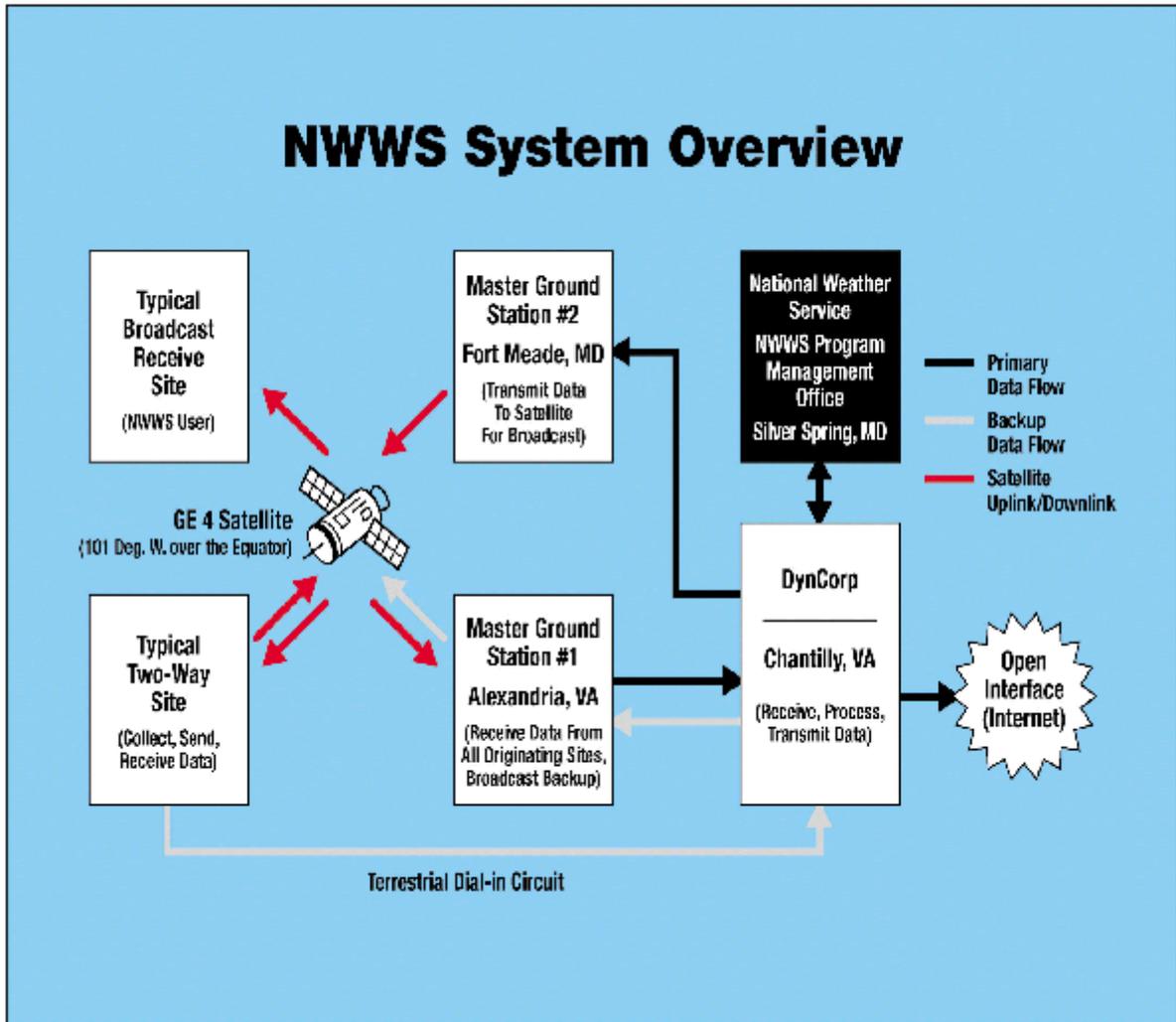


Figure 1

The 20 uplink sites are typical two-way sites (lower left, figure 1), that collect, send, and receive data. The terrestrial dial-in circuit backs-up the satellite connection, for inbound collection of data to the Chantilly, Va. hub, and is activated automatically when satellite connectivity cannot be established. CSC (DynCorp) broadcasts the entire Weather Wire product stream on the Internet, via the Open Interface (lower right, figure 1). This allows NWWS data to be accessed from anywhere with Internet access.